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09/857,030

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Katsuhiko Hiramatsu

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EXAMINER

GANTT, ALAN T

ART UNIT

PAPER NUMBER

2684

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/857,030

**Applicant(s)**

HIRAMATSU, KATSUHIKO

**Examiner**

Alan T. Gantt

**Art Unit**

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 5/31/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-14 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al., in view of Yano et al.

Regarding claim 1, Nakamura discloses a transmission control apparatus as a radiocommunication apparatus that performs asymmetrical communication, said radio communication apparatus comprising:

desired signal power measuring means for measuring desired signal reception power of a plurality of slots for each slot; (paragraphs 0010 and 0090)

interference signal power measuring means for measuring interference signal reception power; (paragraphs 0010 and 0090)

power control information generating means for generating transmission power control information of each slot from said desired signal reception power and said interference signal reception power; ( paragraphs 0056, 0061, and 0064)

Nakamura does not discuss the transmitting of transmission power control information for the individual slots through one slot.

Yano discloses a spread spectrum communication system power control method and is utilized for its teaching of measured results placed into a group and transmitted back to the

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source of the previous transmissions as slot of results. Yano multiplexes two different kinds SNR information with a pilot and transmits the data back to the base station (col. 10, lines 2-55 and Figure 7) and thus, suggests the following limitation:

transmitting means for transmitting said transmission power control information of each slot through one slot (col. 10, lines 2-55 and Figure 7).

Nakumura and Yano are combinable because they share a common endeavor, namely, systems that involve power control methods. At the time of the applicant's invention it would have been obvious to modify Nakumura to include a means of grouping power control information separately from the other information for transmission to the other entity as done by Yano to allow more rapid and specific means to handle the system power control.

Regarding claim 2, Nakumura meets the limitation - The radio communication apparatus according to claim 1, further comprising averaging means for calculating an average value of desired signal reception power over the plurality of slots, wherein said power control information generating means generates transmission power control information of each slot from the average value of said desired signal reception power and said interference signal reception power. (paragraph 0073)

Regarding claim 3, Nakumura discloses a transmission control apparatus as a radio communication apparatus that performs asymmetrical communication with the radio communication apparatus described in claim 1, said radio communication apparatus comprising:

isolating means for isolating transmission power control information of each slot from a received signal; (paragraphs 0073 and 0092 [The TPC is carried out on a slot by

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slot basis and a RAKE demodulates the receive data and TPC bits and controls the transmission of the power amp in accordance with a command specified by the TPC bit – to perform this task, the TPC information has to be isolated from the received signal])

transmission power controlling means for controlling transmission power of each transmission slot based on said transmission power control information of each slot; (paragraph 0092) and

amplifying means for amplifying transmitting data based on control of said transmission power controlling means (paragraph 0092)

Regarding claim 4, Nakumura discloses a transmission control apparatus as a radio communication apparatus that performs asymmetrical communication, said radio communication apparatus comprising:

first reception quality measuring means for measuring reception quality of the entirety of a plurality of slots; (paragraphs 0077-0081 [suggested by a count representing the number of times the measured SIR value crosses an average SIR value threshold])

second reception quality measuring means for measuring reception quality of each slot; (paragraph 0055)

reference power calculating means for calculating transmission reference power of each slot based on said reception quality of the entirety of the plurality of slots and said reception quality of each slot; (paragraphs 073, 0077-0081, and 151-152)

Nakumura does not discuss the transmitting of transmission power control information for the individual slots through one slot.

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Yano discloses a spread spectrum communication system power control method and is utilized for its teaching of measured results placed into a group and transmitted back to the source of the previous transmissions as slot of results. Yano multiplexes two different kinds SNR information with a pilot and transmits the data back to the base station (col. 10, lines 2-55 and Figure 7) and thus, suggests the following limitation:

transmitting means for transmitting information of said transmission reference power of each slot through one slot (col. 10, lines 2-55 and Figure 7).

Nakumura and Yano are combinable because they share a common endeavor, namely, systems that involve power control methods. At the time of the applicant's invention it would have been obvious to modify Nakumura to include a means of grouping power control information separately from the other information for transmission to the other entity as done by Yano to allow more rapid and specific means to handle the system power control.

Regarding claim 6, the examiner takes Official Notice that is well known to base reception quality measurement on CRC checking results and that it would have been obvious to modify Nakumura to utilize the CRC results to determine reception quality as this is a tried and true test for determining this parameter.

Regarding claim 7, Nakumura meets the limitation - The radio communication apparatus according to claim 4, further comprising desired signal power measuring means for measuring desired signal reception power of the plurality of slots for each slot; and interference signal power measuring means for measuring interference signal reception power, wherein said second reception quality measuring means measures reception quality of each slot based on desired

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signal reception power to interference signal reception power. (paragraphs 0010, 0055, 0077-81 and 0090)

Regarding claim 8, Nakumura meets the limitation - The radio communication apparatus according to claim 7, further comprising averaging means for calculating an average value of desired signal reception power over the plurality of slots, wherein said second reception quality measuring means measures reception quality of each slot based on the average value of said desired signal reception power and reception power of said interference signal (paragraph 0077-0081 [uses continuous measurements over a plurality of slots of instantaneous SIR which is for a single slot and uses continuous measurements over a plurality of slots of instantaneous SIR which is for a single slot])).

Regarding claim 9, Nakumura meets the limitation - A radio communication apparatus that performs asymmetrical communication with the radio communication apparatus described in claim 4, said radio communication apparatus comprising:

isolating means for isolating information of transmission reference power of each slot from a received signal; (paragraphs 0073 and 0092 [The TPC is carried out on a slot by slot basis and a RAKE demodulates the receive data and TPC bits and controls the transmission of the power amp in accordance with a command specified by the TPC bit – to perform this task, the TPC information has to be isolated from the received signal])

transmission power controlling means for controlling transmission power of each transmission slot based on said information of transmission reference power of each slot; (paragraph 0092) and

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amplifying means for amplifying transmitting data based on control of said transmission power controlling means. (paragraph 0092)

Regarding claim 10, Nakumura discloses a transmission control apparatus as a base station apparatus mounting a radio communication apparatus thereon, said radio communication apparatus that performs asymmetrical communication comprising:

desired signal power measuring means for measuring desired signal reception power of a plurality of slots for each slot; (paragraph 0010 and 0090)

interference signal power measuring means for measuring interference signal reception power; (paragraph 0010 and 0090)

power control information generating means for generating transmission power control information of each slot from said desired signal reception power and said interference signal reception power; (paragraphs 0056, 0061, and 0064)

Nakumura does not discuss the transmitting of transmission power control information for the individual slots through one slot.

Yano discloses a spread spectrum communication system power control method and is utilized for its teaching of measured results placed into a group and transmitted back to the source of the previous transmissions as slot of results. Yano multiplexes two different kinds SNR information with a pilot and transmits the data back to the base station (col. 10, lines 2-55 and Figure 7) and thus, suggests the following limitation:

transmitting means for transmitting transmission power control information of each slot through one slot (col. 10, lines 2-55 and Figure 7).

Nakumura and Yano are combinable because they share a common endeavor, namely, system that involves power control methods. At the time of the applicant's invention it would



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have been obvious to modify Nakumura to include a means of grouping power control information separately from the other information for transmission to the other entity as done by Yano to allow more rapid and specific means to handle the system power control.

Regarding claim 11, Nakumura discloses a transmission control apparatus including a communication terminal apparatus mounting a radio communication apparatus thereon, said radio communication apparatus that performs asymmetrical communication comprising:

desired signal power measuring means for measuring desired signal reception power of a plurality of slots for each slot; (paragraphs 0010 and 0090)

interference signal power measuring means for measuring interference signal reception power; (0010 and 0090)

power control information generating means for generating transmission power control information of each slot from said desired signal reception power and said interference signal reception power; ( paragraphs 0056, 0061, and 0064)

Nakumura does not discuss the transmitting of transmission power control information for the individual slots through one slot.

Yano discloses a spread spectrum communication system power control method and is utilized for its teaching of measured results placed into a group and transmitted back to the source of the previous transmissions as slot of results. Yano multiplexes two different kinds SNR information with a pilot and transmits the data back to the base station (col. 10, lines 2-55 and Figure 7) and thus, suggests the following limitation:

transmitting means for transmitting transmission power control information of each slot through one slot (col. 10, lines 2-55 and Figure 7).

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Nakumura and Yano are combinable because they share a common endeavor, namely, systems that involve power control methods. At the time of the applicant's invention it would have been obvious to modify Nakumura to include a means of grouping power control information separately from the other information for transmission to the other entity as done by Yano to allow more rapid and specific means to handle the system power control.

Regarding claim 12, Nakumura discloses a transmission control apparatus including a transmission power controlling method, at one radio communication apparatus that performs asymmetrical communication,, said method comprising the steps of:

- measuring desired signal reception power of a plurality of slots for each slot;  
(paragraphs 0010 and 0090)
- measuring interference signal reception power; (paragraphs 0010 and 0090)
- generating transmission power control information of each slot from said desired signal reception power and said interference signal reception power; ( paragraphs 0056, 0061, 0064)

At other radio communication apparatus, said method comprising the steps of:

- isolating transmission power control information of each slot from a received signal; (paragraphs 0073 and 0092 [The TPC is carried out on a slot by slot basis and a RAKE demodulates the receive data and TPC bits and controls the transmission of the power amp in accordance with a command specified by the TPC bit – to perform this task, the TPC information has to be isolated from the received signal])
- and

- amplifying transmission power of each transmission slot based on said transmission power control information of each slot data. (paragraph 0092)

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Nakumura does not discuss the transmitting of transmission power control information for the individual slots through one slot.

Yano discloses a spread spectrum communication system power control method and is utilized for its teaching of measured results placed into a group and transmitted back to the source of the previous transmissions as slot of results. Yano multiplexes two different kinds SNR information with a pilot and transmits the data back to the base station (col. 10, lines 2-55 and Figure 7) and thus, suggests the following limitation:

transmitting information of said transmission reference power of each slot through one slot (col. 10, lines 2-55 and Figure 7).

Nakumura and Yano are combinable because they share a common endeavor, namely, systems that involve power control methods. At the time of the applicant's invention it would have been obvious to modify Nakumura to include a means of grouping power control information separately from the other information for transmission to the other entity as done by Yano to allow more rapid and specific means to handle the system power control.

Regarding claim 13, Nakumura meets the following limitation - the transmission power controlling method according to claim 12, wherein an average value of desired signal reception power is calculated over the plurality of slots, and transmission power control information of each slot is generated from the average value of said desired signal reception power and said interference signal reception power. (paragraph 0077-0081 [uses continuous measurements over a plurality of slots of instantaneous SIR which is for a single slot and uses continuous measurements over a plurality of slots of instantaneous SIR which is for a single slot]).

Regarding claim 14, Nakumura discloses a transmission control apparatus including transmission power controlling method, at one radio communication apparatus that performs asymmetrical communication, said method comprising:

measuring reception quality of the entirety of a plurality of slots; (paragraphs 0077-0081 [suggested by a count representing the number of times the measured SIR value crosses an average SIR value threshold and uses continuous measurements over a plurality of slots of instantaneous SIR which is for a single slot])

measuring reception quality of each slot; (paragraph 0055)

calculating transmission reference power of each slot based on said reception quality of the entirety of the plurality of slots and said reception quality of each slot; (paragraphs 073, 0077-0081, and 151-152)

At other radio communication apparatus, said method comprising the steps of:

isolating information of transmission reference power of each slot from a received signal; (paragraphs 0073 and 0092 [The TPC is carried out on a slot by slot basis and a RAKE demodulates the receive data and TPC bits and controls the transmission of the power amp in accordance with a command specified by the TPC bit – to perform this task, the TPC information has to be isolated from the received signal]) and

amplifying transmission power of each transmission slot based on said information of transmission reference power of each slot (paragraph 0092).

Nakumura does not discuss the transmitting of transmission power control information for the individual slots through one slot.

Yano discloses a spread spectrum communication system power control method and is utilized for its teaching of measured results placed into a group and transmitted back to the source of the previous transmissions as slot of results. Yano multiplexes two different kinds

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SNR information with a pilot and transmits the data back to the base station (col. 10, lines 2-55 and Figure 7) and thus, suggests the following limitation:

transmitting information of said transmission reference power of each slot through one slot (col. 10, lines 2-55 and Figure 7).

Nakumura and Yano are combinable because they share a common endeavor, namely, systems that involve power control methods. At the time of the applicant's invention it would have been obvious to modify Nakumura to include a means of grouping power control information separately from the other information for transmission to the other entity as done by Yano to allow more rapid and specific means to handle the system power control.

#### ***Allowable Subject Matter***

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 5, the calculating of the transmission reference power of each slot utilizing a reference power calculating means that adds reception quality of the entirety of the plurality of slots and said reception quality of each slot was neither found, suggested, nor made evident by the prior art.

#### ***Conclusion***

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hamabe discloses a method of controlling transmission power in cellular systems and a base station apparatus.

Yamaura et al. discloses a communication method in which communication is carried out between a base station and a mobile station using a TDMA scheme where the mobile station estimates the received signal quality for a time slot.

Abeta et al. discloses a channel estimation unit where estimation of data symbols is obtained from a pilot symbol sequence that is parallel with the data symbol sequence.

Any inquiry concerning this communication from the examiner should be addressed to Alan Gantt at telephone number (703) 305-0077. The examiner can normally be reached between 9:30 AM and 6 PM within the Eastern Time Zone. The group FAX number is (703) 872-9306.

Any inquiry of a general nature or relating to this application should be directed to the group receptionist at telephone number (703) 305-4700.



Alan T. Gantt

  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**

June 10, 2004